ELSEVIER

Volumes 317–318, 12 April 2001

Journal of ALLOYS AND COMPOUNDS

www.elsevier.com/locate/jallcom

# Contents

Preface 1

**Plenary and Invited Lectures**

Anisotropy and spin-reorientations in Co-rich rare earth compounds . . . 2
K.H.J. Buschow, S.J. Hu, O. Tegus, L. Zhang, E. Brück and F.R. de Boer (Amsterdam, Netherlands)

Single molecule magnets: a new class of magnetic materials . . . 8
D. Gatteschi (Florence, Italy)

Theoretical investigation of $L1_0$-disorder phase equilibria in Fe–Pd alloy system . . . 13
T. Mohri (Sapporo, Japan), T. Horiuchi (Ibaraki, Japan), H. Uzawa, M. Ibaragi (Sapporo, Japan), M. Igarashi and F. Abe (Ibaraki, Japan)

Phase equilibria and diffusion paths in the Ti–Al–O–N system . . . 19
H.J. Seifert, A. Kussmaul and F. Aldinger (Stuttgart, Germany)

Binary, ternary and quaternary compound former/nonformer prediction via Mendeleev number . . . 26
P. Villars (Vitznau, Switzerland), K. Brandenburg, M. Berndt (Bonn, Germany), S. LeClair, A. Jackson (Wright-Patterson, USA), Y.-H. Pao, B. Igelnik (Cleveland, OH, USA), M. Oxley (Wright-Patterson, USA), B. Bakshi (Columbus, OH, USA), P. Chen (Fairborn, OH, USA) and S. Iwata (Tokyo, Japan)

Single crystal neutron diffraction investigations of the crystal and magnetic structures of $R_2Fe_{14}B$ (R=Y, Nd, Ho, Er) . . . 39
P. Wolfers, M. Bacmann and D. Fruchart (Grenoble, France)

$^{57}$Fe Mössbauer spectroscopy study of the $AFe_xAl_{12-x}$ intermetallics (A=Y, Tm, Lu and U, $4 \leq x \leq 4.3$) . . . 44
J.C. Waerenborgh, P. Salamakha, O. Sologub, A.P. Gonçalves (Sacavém, Portugal), S. Sério, M. Godinho (Lisboa, Portugal) and M. Almeida (Sacavém, Portugal)

Crystallochemistry and Kondo-like behaviour of the thorium and uranium arsenoselenides . . . 52
Z. Henkie, A. Pietraszko, A. Wojakowski, L. Kępiński and T. Cichorek (Wroclaw, Poland)

**Hydrides and Reactions with Hydrogen**

Neutron diffraction study on the deuterium site occupation and magnetic structure of the $Nd_2(Fe,Ga)_{14}BD_x$ compounds . . . 60
C. Chacon, O. Isnard and E. Suard (Grenoble, France)

Hydrogen absorption properties of CeNiAl: influence on its crystal structure and magnetic behaviour . . . 67
J.-L. Bobet, B. Chevalier, B. Darriet, M. Nakhl, F. Weill and J. Etourneau (Pessac, France)

Hydrogen absorption in vanadium- and niobium-based topologically close-packed structures . . . 71
J.-M. Joubert and A. Percheron-Guégan (Thiais, France)

Investigation of the vacancy-ordered phases in the Pd–H system . . . 77
S. Miraglia, D. Fruchart, E.K. Hlil, S.S.M. Tavares (Grenoble, France) and D. Dos Santos (Rio de Janeiro, Brazil)

Structural and magnetic properties of $RFe_2H_x$ hydrides (R=Y, Er) . . . 83
V. Paul-Boncour (Thiais, France), S.M. Filipek (Warsaw, Poland), A. Percheron-Guégan (Thiais, France), I. Marchuk and J. Pielaszek (Warsaw, Poland)

Effect of interstitial hydrogen on $UFe_xAl_{12-x}$ . . . 88
S. Sério (Lisbon, Portugal), J.C. Waerenborgh, A.P. Gonçalves, M. Almeida (Sacavém, Portugal), D. Fruchart, S. Miraglia (Grenoble, France) and M. Godinho (Lisbon, Portugal)

Neutron diffraction studies of Zr-containing intermetallic hydrides. Cubic $Zr_3V_3B_{0.24}O_{0.36}D_{8.0}$ and $Zr_3V_3B_{0.40}O_{0.60}D_{6.4}$ with filled $\eta_1$-type structures . . . 92
V.A. Yartys (Kjeller, Norway and Lviv, Ukraine), A.B. Riabov (Lviv, Ukraine) and B.C. Hauback (Kjeller, Norway)

**Oxydes and Reactions with Oxygen**

Characterization of $RuO_2$ and $IrO_2$ films deposited on Si substrate . . . 98
P.C. Liao, Y.S. Huang (Taipei, Taiwan, Republic of China) and K.K. Tiong (Keelung, Taiwan, Republic of China)

Elsevier Science B.V.

Vanadium oxides $V_2O_5$ and $NaV_2O_5$ under high pressures: Structural, vibrational, and electronic properties . . . . . 103
I. Loa, A. Grzechnik (Stuttgart, Germany), U. Schwarz (Stuttgart and Dresden, Germany), K. Syassen (Stuttgart, Germany), M. Hanfland (Grenoble, France) and R.K. Kremer (Stuttgart, Germany)

Charge order and quasi-one-dimensional behavior in $\beta(\beta')$-$A_xV_2O_5$ . . . . . 109
Y. Ueda, H. Yamada, M. Isobe and T. Yamauchi (Chiba, Japan)

Structure, magnetism and electrical conductivity of a new ternary manganese oxide: $BaMn_3O_6$ . . . . . 115
K. Wakiya, H. Sato, A. Miyazaki, T. Enoki, M. Isobe and Y. Ueda (Tokyo, Japan)

Synthesis, crystal structure and TEM study of the new hollandite-type $Ba_{-8/7}Mo_8O_{16}$ . . . . . 120
N. Barrier, P. Gougeon (Rennes, France) and R. Retoux (Le Mans, France)

Synthesis, characterization, electrical and magnetic properties of $CrTa_2O_6$ and $CrNb_2O_6$ . . . . . 127
V. Guillen-Viallet, J.F. Marucco (Orsay and Gif sur Yvette, France) and M. Ghysel (Orsay, France)

$GaMgMo_4O_7$ and $Fe_2Mo_4O_7$ — two low-valent molybdenum oxides with a fully ordered $Sc_{0.75}Zn_{1.25}Mo_4O_7$ type structure . . 132
M. Hainz and H. Boller (Linz, Austria)

Magnetic and transport properties of the solid solution system $La_{2-x}Sr_xMnRuO_6$ with double perovskite structure . . . . . 136
M. Fang (Kyoto, Japan and Hangzhou, People's Republic of China), M. Kato, K. Yoshimura and K. Kosuge (Kyoto, Japan)

Studies of the effect of internal and hydrostatic pressure on the structure and transport properties of $La_{2/3}Ca_{1/3}MnO_3$ thin films . . . . . 141
G.M. Gross, R.B. Praus (Stuttgart, Germany), S. Yaghoubzadeh, F.S. Razavi (St. Cathrines, Canada) and H.-U. Habermeier (Stuttgart, Germany)

Magnetic and electrical properties of $Nd_{0.66}(Sr_{1-y}Li_y)_{0.34}MnO_3$ manganites . . . . . 145
N. Hamad, I. El-Kassab, L. Haupt, N. Kasper, K. Bärner, G.H. Rao (Göttingen, Germany), U. Sondermann (Marburg, Germany) and E. Gmelin (Stuttgart, Germany)

Electronic structure of a hole doped oxide with a quasi-1D crystal structure $Y_{2-x}(Sr,Ca)_xBaNiO_5$ . . . . . 149
F.-X. Lannuzel, E. Janod, C. Payen, G. Ouvrard, P. Moreau, O. Chauvet (Nantes, France), P. Parent and C. Laffon (Orsay, France)

Effects of $Li^+$ inclusion on the magnetic properties of mixed Cr/Fe oxide pillared α-zirconium phosphate materials . . . . . 153
M. Gabás, J.-R. Ramos-Barrado, A. Jiménez-López, E. Rodríguez-Castellón and J. Mérida-Robles (Málaga, Spain)

Surface characterisation of spinels with Ti(IV) distributed in tetrahedral and octahedral sites . . . . . 160
M.A. Arillo, M.L. López, C. Pico, M.L. Veiga (Madrid, Spain), A. Jiménez-López and E. Rodríguez-Castellón (Málaga, Spain)

$S=1/2$ antiferromagnetic chains and dimers on hole-doped edge-sharing $CuO_2$ chains . . . . . 164
Z. Hiroi (Chiba, Japan), M. Okumura, T. Yamada and M. Takano (Kyoto, Japan)

Spin-1/2 quantum antiferromagnetic chains with adjustable superexchange interactions found in $BaCu_2(Si_{1-x}Ge_x)_2O_7$ . . . . . 171
T. Yamada, M. Takano (Kyoto, Japan) and Z. Hiroi (Chiba, Japan)

Quantized magnetization plateaux in the orthogonal dimer system $SrCu_2(BO_3)_2$ . . . . . 177
H. Kageyama (Tokyo, Japan), Y. Narumi, K. Kindo (Osaka, Japan), K. Onizuka, Y. Ueda and T. Goto (Tokyo, Japan)

Orthoborates processed by soft routes: correlation luminescence structure . . . . . 183
G. Bertrand-Chadeyron, M. El-Ghozzi, D. Boyer, R. Mahiou and J.C. Cousseins (Aubière, France)

**Chalcogenides and Reactions with Chalcogens**

New synthetic routes to transition metal ternary nitrides and sulfides . . . . . 186
M.G. Barker, M. Grazia Francesconi, P.M. O'Meara and C.F. Baker (Nottingham, UK)

Lanthanide polysulfides at high pressures . . . . . 190
A. Grzechnik (Stuttgart, Germany)

Nickel Chevrel phase supported on porous alumina . . . . . 195
V. Harel-Michaud, G. Pesnel-Leroux, L. Burel, R. Chevrel (Rennes, France), C. Geantet, M. Cattenot and M. Vrinat (Villeurbanne, France)

Electrical properties and phase transitions of $TlCu_3S_2$ and $BaCu_2S_2$ . . . . . 201
T. Ohtani, H. Takeuchi, K. Koh and T. Kaneko (Okayama, Japan)

Electrical and optical anisotropic properties of rhenium-doped molybdenum disulphide . . . . . 208
K.K. Tiong (Keelung, Taiwan, ROC), Y.S. Huang (Taipei, Taiwan, ROC) and C.H. Ho (Taipei, Taiwan, ROC)

Thermodynamic and magnetic properties of intercalated layered compounds $Fe_xNbS_2$ . . . . . 213
T. Tsuji, Y. Yamamura, M. Koyano, S. Katayama (Ishikawa, Japan) and M. Ito (Yokohama, Japan)

Preparation and crystal structures of $Cu_2HfS_3$ . . . . . 217
H. Wada, A. Sato and H. Nozaki (Ibaraki, Japan)

In-plane anisotropy of the optical and electrical properties of $ReS_2$ and $ReSe_2$ layered crystals . . . . . 222
C.H. Ho, Y.S. Huang (Taipei, Taiwan, ROC) and K.K. Tiong (Keelung, Taiwan, ROC)

Neutron diffraction study of magnetic ordering of two binary uranium tellurides $U_3Te_5$ and $U_2Te_3$ . . . . . 227
O. Tougait (Rennes, France), G. André, F. Bourée (Gif-sur-Yvette, France) and H. Noël (Rennes, France)

Heat capacity of $(Cr_{1-x}Ni_x)_3Te_4$ ($x$=0–0.2) at high temperatures . . . . . 233
T. Tsuji (Ishikawa, Japan) and K. Yasui (Fukushima, Japan)

**Pnictides and Reactions with Pnicogens**

Layered ternary transition metal nitrides; synthesis, structure and physical properties . . . . . 237
D.H. Gregory, P.M. O'Meara, A.G. Gordon, D.J. Siddons, A.J. Blake, M.G. Barker (Nottingham, UK), T.A. Hamor and P.P. Edwards (Birmingham, UK)

High temperature–high pressure nitridation of $\beta$-$Ti_{63}Nb_{37}$ by means of the chemical oven technique . . . . . 245
M. Ferretti and A. Martinelli (Genova, Italy)

Structural chemistry, magnetic and electrical properties of ternary rare-earth nickel phosphides, $R_{20}Ni_{42}P_{30}$ (R=Ce, Sm) . . . . . 250
V. Babizhetskyy, F. Weitzer and K. Hiebl (Wien, Austria)

Magnetization curves in MnRhP around the Curie temperature . . . . . 254
F. Ono, H. Inoue, S. Wei, A. Takahashi (Okayama, Japan), S. Endo (Osaka and Saitama, Japan), N. Fujii (Osaka, Japan), T. Kanomata (Tagajyo, Japan), R. Zach (Cracow, Poland) and A. Iwase (Ibaraki, Japan)

NMR properties of CoRhP: mixing between Co and Rh sites . . . . . 258
H. Nishihara, T. Yoshida (Otsu, Japan), T. Matsukawa, T. Kanomata (Tagajo, Japan), G. Strijkers, W.J.M. de Jonge (Eindhoven, The Netherlands), F. Wagatsuma and T. Shinohara (Sendai, Japan)

A comparative analysis of the three polymorphic structures $H_1$, $O_{10}$ and $H_{12}$ of FeRhP . . . . . 262
M. Artigas (Grenoble, France and Zaragoza, Spain), M. Bacmann, D. Fruchart (Grenoble, France), R. Fruchart (Saint Martin d'Hères, France), M. Guillot and P. Vulliet (Grenoble, France)

Crystal structure, magnetic and electronic properties of $Co_xFe_{1-x}MnP$ system . . . . . 266
B. Średniawa, R. Zach, P. Fornal, R. Duraj, A. Bombik, J. Tobola, S. Kaprzyk, S. Niziol (Cracow, Poland), D. Fruchart, M. Bacmann, R. Fruchart (Grenoble, France) and J. Stanek (Cracow, Poland)

Structure and magnetism in the polymorphous MnFeAs . . . . . 274
J. Tobola (Kraków, Poland), M. Bacmann, D. Fruchart, P. Wolfers (Grenoble, France), S. Kaprzyk (Kraków, Poland) and A.-A. Koumina (Marrakech, Morocco)

V–Mn–{Sn,Sb} ternary systems . . . . . 280
A.V. Tkachuk, Yu.K. Gorelenko, Yu.V. Stadnyk and O.I. Bodak (Lviv, Ukraine)

Crystal structure of $Zr_2CuSb_3$ and related compounds . . . . . 284
N. Koblyuk, G. Melnyk, L. Romaka, O. Bodak (Lviv, Ukraine) and D. Fruchart (Grenoble, France)

Structural and electrical properties of $Co_{1-x}Ru_xSb_2$ . . . . . 287
T. Harada, T. Kanomata, T. Suzuki (Tagajo, Japan), H. Yoshida and T. Kaneko (Sendai, Japan)

Electrical resistivity and magnetism in some ternary intermetallics . . . . . 293
R.V. Dremov (Prague, Czech Republic), N. Koblyuk, Ya. Mudryk, L. Romaka (Lviv, Ukraine) and V. Sechovský (Prague, Czech Republic)

Spin reorientation in MnBi . . . . . 297
H. Yoshida, T. Shima, T. Takahashi, H. Fujimori, S. Abe, T. Kaneko (Sendai, Japan), T. Kanomata and T. Suzuki (Tagajo, Japan)

**Compounds and Alloys with C, Si, Ge and Sn**

Magnetic properties and electronic structure of $CeB_2C_2$ . . . . . 302
K. Suzuki, M. Kato, R. Watanuki (Yokohama, Japan) and T. Terashima (Tsukuba, Japan)

Magnetic heat capacity and electrical resistivity of RCoC (R=Dy, Ho, Er, Y) . . . . . 306
K. Suzuki, T. Murayama and M. Eguchi (Yokohama, Japan)

Miscibility of binary VC–MC carbides in quaternary Fe–V–M–C alloys . . . . . 311
S. Hamar-Thibault (Saint Martin d'Hères, France), L. Adnane and R. Kesri (Bab Ezzouar, Alger, Algeria)

Crystal growth by molten metal flux method and properties of manganese silicides . . . . . 315
S. Okada (Tokyo, Japan), T. Shishido (Sendai, Japan), Y. Ishizawa (Iwaki, Japan), M. Ogawa (Atsugi, Japan), K. Kudou (Yokohama, Japan), T. Fukuda (Sendai, Japan) and T. Lundström (Uppsala, Sweden)

Isothermal cross-section of the Ce–Pd–Si phase diagram at 600°C . . . . . 320
Yu.D. Seropegin, A.V. Gribanov, O.L. Kubarev, A.I. Tursina (Moscow, Russia) and O.I. Bodak (Lviv, Ukraine)

New ternary silicide of cerium and palladium $Ce_3Pd_5Si$ . . . . . 324
A.V. Gribanov, Yu.D. Seropegin, O.L. Kubarev (Moscow, Russia), L.G. Akselrud and O.I. Bodak (L'viv, Ukraine)

Electronic structure of $MnSi_{0.7}Al_{1.3}$ and related transition metal alloys with the $TiSi_2$ structure . . . . . 327
P. Pécheur (Nancy, France), J. Tobola (Nancy, France and Krakow, Poland), H. Kenzari (Nancy, France), B. Malaman and R. Welter (Vandoeuvre-les-Nancy, France)

Structural study of $UCuGe_{1.75}$ by X-ray and electron diffraction . . . . . 331
B. Darriet, B. Chevalier, J. Darriet and S. Pechev (Pessac, France)

Magnetism of $U_4(Ru_{1-x}Os_x)_7Ge_6$ solid solutions . . . . . 336
E. Colineau, F. Wastin, E.J. Higgins and J. Rebizant (Karlsruhe, Germany)

Electronic structure of RTX (R=Pr, Nd; T=Cu, Ag, Au; X=Ge, Sn) compounds . . . . . 340
A. Szytuła, D. Fus, B. Penc (Reymonta, Poland) and A. Jezierski (Smoluchowskiego, Poland)

Ternary Hf–Co–Sn system . . . . . 347
L. Romaka, Yu.V. Stadnyk and O. Bodak (Lviv, Ukraine)

Phase equilibria and magnetic studies in the ternary system Ce–Au–Sn . . . . . 350
P. Boulet (Rennes, France, Genova, Italy and Wien, Austria), D. Mazzone (Genova, Italy), H. Noël (Rennes, France), P. Rogl (Wien, Austria) and R. Ferro (Genova, Italy)

Synthesis, crystal structure and physical properties of ZrNiSn semiconductor doped with Mn . . . . . 357
O.I. Bodak (L'viv, Ukraine), B.V. Padlyak (L'viv, Ukraine and Gdańsk, Poland), Yu.V. Stadnyk (L'viv, Ukraine), J. Pierre (Grenoble, France), A.V. Tkachuk, L.P. Romaka and Yu.K. Gorelenko (L'viv, Ukraine)

New phases in the ternary Cu–Ti–Sn system . . . . . 363
S. Hamar-Thibault and C.H. Allibert (Saint-Martin-d'Hères, France)

**Compounds and Alloys with B, Al, Ga and In**

The peculiarities of the structure formation in directionally crystallized eutectics $EuB_6$–$MeB_2$ . . . . . 367
Yu. Paderno, V. Paderno, N. Shitsevalova and V. Filippov (Kiev, Ukraine)

The effect of microstructure on hardness measurements in the aluminium-rich corner of the Al–Ni–Cr system . . . . . 372
D.N. Compton, L.A. Cornish and M.J. Witcomb (Johannesburg, South Africa)

Phase relations in the Al-rich corner of the Ti–Ni–Al system . . . . . 379
J.J. Ding, P. Rogl and H. Schmidt (Wien, Austria)

Electronic structure and ESR in GdTAl ternary compounds; T=3d, 4d transition metals . . . . . 385
J. Jarosz and E. Talik (Katowice, Poland)

Magnetic and electrical properties of $Fe_{2-x}V_{1-x}Al$ . . . . . 390
T. Kanomata, T. Sasaki, T. Hoshi, T. Narita, T. Harada (Tagajo, Japan), H. Nishihara, T. Yoshida (Otsu, Japan), R. Note, K. Koyama, H. Nojiri, T. Kaneko and M. Motokawa (Sendai, Japan)

Magnetic and electrical properties of the $UCu_{4-x}Mn_xAl_8$ alloys . . . . . 395
W. Suski and K. Wochowski (Wroclaw, Poland)

Phase diagram of the Ti–Ga system . . . . . 398
N.V. Antonova and L.A. Tretyachenko (Kiev, Ukraine)

Magnetic properties of $Co_2TiGa$ compound . . . . . 406
T. Sasaki, T. Kanomata, T. Narita (Tagajo, Japan), H. Nishihara (Otsu, Japan), R. Note, H. Yoshida and T. Kaneko (Sendai, Japan)

Structural characterisation and corrosion resistance of Ga-precious metal alloys formed by liquid–solid reaction at room temperature . . . . . 411
M.R. Pinasco (Genoa, Italy), E. Angelini (Turin, Italy), E. Cordano (Genoa, Italy) and F. Rosalbino (Turin, Italy)

The effect of Th substitution for U in the heavy fermion $U_2Pt_2In$ . . . . . 419
L.C.J. Pereira, J.C. Waerenborgh (Sacavém, Portugal), I. Catarino, G. Bonfait (Sacavém and Monte de Caparica, Portugal), M. Godinho (Lisboa, Portugal) and M. Almeida (Sacavém, Portugal)

**Transition-Transition Metal Alloys**

Low temperature formation of nanocrystalline Fe–W and Fe–Mo compounds . . . . . 423
A.A. Novakova, T.Yu. Kiseleva, V.V. Lyovina, D.V. Kuznetsov and A.L. Dzidziguri (Moscow, Russia)

Theoretical study of structural stability and magnetism in the $Pd_3Mn$ antiphase . . . . . 428
J. Tobola (Nancy, France and Kraków, Poland) and P. Pécheur (Nancy, France)

**Rare Earth Compounds and Systems**

Thermodynamic optimization of the systems Mn–Gd and Mn–Y using new experimental results . . . . . 433
J. Gröbner (Clausthal-Zellerfeld, Germany), A. Pisch (St. Martin d'Hères, France) and R. Schmid-Fetzer (Clausthal-Zellerfeld, Germany)

Magnetism in $HoCo_2$ and $ErCo_2$ under high pressure . . . . . 438
O. Syshchenko (Higashi-Hiroshima, Japan and Prague, Czech Republic), T. Fujita (Higashi-Hiroshima, Japan), V. Sechovský, M. Diviš (Prague, Czech Republic) and H. Fujii (Higashi-Hiroshima, Japan)

$R_yMg_{34}Zn_{57}$ icosahedral quasicrystals: The tuning of a model spin glass . . . . . 443
P.C. Canfield and I.R. Fisher (Ames, IA, USA)

Comparison of the interaction of components in the La–Co–Zn and Ce–Co–Zn ternary systems at 470 K . . . . . 448
O.Ya. Makaryk, G.S. Dmytriv, D.G. Kevorkov and V.V. Pavlyuk (L'viv, Ukraine)

Magnetic properties of $(Ho,Y)_6Fe_{23}$ intermetallic compounds . . . . . 450
J. Ostorero (Thiais, France)

Phase stability, structure and magnetic properties of $R_3(Fe,TM)_{29}$, (R=Gd, Dy, Er, Y and TM=V, Ti) compounds with disordered structures . . . . . 455
V. Psycharis (Attiki, Greece), M. Gjoka (Attiki and Ioannina, Greece), C. Christides (Patras, Greece) and D. Niarchos (Attiki, Greece)

Magnetic properties of a $DyCo_{10}V_2$ single crystal . . . . . 459
O. Tegus (Amsterdam, The Netherlands and Huhhot, PR China), Y. Janssen, E. Brück, A.A. Menovsky, F.R. de Boer and K.H.J. Buschow (Amsterdam, The Netherlands)

Systematic composition dependence in $YbCu_{5-x}Au_x$ from dense Kondo to antiferromagnetic system through quantum critical point around $x$=0.2–0.4 . . . . . 465
K. Yoshimura, T. Kawabata, N. Sato (Kyoto, Japan), N. Tsujii, T. Terashima, C. Terakura, G. Kido (Tsukuba, Japan) and K. Kosuge (Kyoto, Japan)

Magnetic characteristics of $Er(Mn_{12-x}Fe_x)$ compounds ($x$=7, 9) determined by X-ray magnetic circular dichroism . . . . . 470
M. Morales, M. Bacmann (Grenoble, France), Ch. Baudelet, A. Delobbe (Orsay, France), D. Fruchart (Grenoble, France), Ch. Giorgetti, G. Krill (Orsay, France) and P. Wolfers (Grenoble, France)

The interaction of palladium with cobalt and erbium at 600°C . . . . . 475
J.I. Rousnyak, N.A. Tinikashvili, M.V. Raevskaya and A.V. Gribanov (Moscow, Russia)

**Second Italian Workshop on Alloys and Compounds**

Foreword: II Italian Workshop on Alloys and Intermetallic Compounds . . . . . 478

**Phase Identification and Equilibria**

Metastable structures in α–β′ brass . . . . . 479
S. Gialanella and L. Lutterotti (Mesiano (Trento), Italy)

Defect structures in FeAl B2 alloys . . . . . 485
S. Gialanella (Mesiano-Trento, Italy), R.S. Brusa (Povo (Trento), Italy), W. Deng (Nanning, China), F. Marino (Torino, Italy), T. Spataru and G. Principi (Padova, Italy)

$Cu_xHg_y$: a puzzling compound . . . . . 491
M.M. Carnasciali and G.A. Costa (Genova, Italy)

Smith thermal analysis of selected Pr–Mg alloys . . . . . 497
A. Saccone, D. Macciò (Genoa, Italy), J.A.J. Robinson, F.H. Hayes (Manchester, UK) and R. Ferro (Genoa, Italy)

Effect of Cu and Zn on the melting and transformation temperatures of Pr and Gd . . . . . 503
A. Saccone, A.M. Cardinale, S. Delfino, G. Cacciamani and R. Ferro (Genova, Italy)

The isothermal section at 400°C of the Yb–Ag–Sn ternary system . . . . . 513
G. Zanicchi, D. Mazzone, P. Riani, R. Marazza and R. Ferro (Genova, Italy)

Ternary intermetallic RAgGa, RAuGa alloys (R=light rare earth and Yb) . . . . . 521
D. Rossi and R. Ferro (Genoa, Italy)

**Thermodynamics**

Thermodynamic stabilities of intermediate phases in the Ca–Si system . . . . . 525
S. Brutti, A. Ciccioli, G. Balducci, G. Gigli (Roma, Italy), P. Manfrinetti and M. Napoletano (Genova, Italy)

Thermodynamic investigation of samarium–nickel alloys . . . . . 532
G. Borzone, N. Parodi, R. Raggio and R. Ferro (Genoa, Italy)

**Physical Properties**

A quantum phase transition driven by the electron lattice interaction gives high $T_c$ superconductivity . . . . . 537
A. Bianconi, S. Agrestini, G. Bianconi, D. Di Castro and N.L. Saini (Roma, Italy)

On the change of electronic states at the Fermi level by Ce doping in the intermetallic $LaRu_2$ . . . . . 542
N.L. Saini, S. Agrestini, D. Di Castro (Roma, Italy), Z. Wu (Roma, Italy and Beijing, China), A. Bianconi, D. Gozzi, G. Balducci (Roma, Italy), M. Battisti and A. Marcelli (Frascati, Italy)

Magnetic structure of $Nd_7Co_6Al_7$ . . . . . 546
O. Moze (Modena, Italy), W. Kockelmann (Bonn, Germany), F. Canepa, P. Manfrinetti and A. Palenzona (Genova, Italy)

Physical properties of $Ce_2CoSn_2$ . . . . . 550
S. Cirafici, F. Canepa, P. Manfrinetti and M. Napoletano (Genova, Italy)

Ferrimagnetism in $Tb_3Co_8Sn_4$ intermetallic compound . . . . . 556
F. Canepa, P. Manfrinetti, M. Napoletano and S. Cirafici (Genova, Italy)

Crystallographic and magnetic behaviour of $RCu_9Sn_4$ and $RCu_{9.4}Sn_{3.6}$ (R=La to Nd) compounds . . . . . 560
S. Singh (Mumbai, India), M.L. Fornasini, P. Manfrinetti, A. Palenzona (Genova, Italy), S.K. Dhar and P.L. Paulose (Mumbai, India)

A Mössbauer study of the new phases $Th_4Fe_{13}Sn_5$ and $ThFe_{0.22}Sn_2$ . . . . . 567
G. Principi, T. Spataru, A. Maddalena (Padova, Italy), A. Palenzona, P. Manfrinetti (Genova, Italy), P. Blaha, K. Schwarz (Vienna, Austria), V. Kuncser and G. Filoti (Bucharest, Romania)

**Chemical Properties**

The high temperature oxidation of a two-phase Ag–Y alloy under 1 and $10^{-20}$ atm $O_2$ . . . . . 573
Y. Niu (Shenyang, China and Genova, Italy), F. Gesmundo (Genova, Italy), M. Al-Omary (Sharjah, United Arab Emirates) and J. Song (Shenyang, China)

Oxidation of a ternary Cu–Ni–Fe alloy under low oxygen pressures at 800–900°C . . . . . 578
Y.S. Li (Shenyang and Dalian, China), Y. Niu (Shenyang, China and Genova, Italy) and F. Gesmundo (Genova, Italy)

Getter potentialities of some intermetallics: $ZrAl_2$, $ZrAl_3$ and $CeNi_5$ . . . . . 583
M. Ferrini and D. Gozzi (Rome, Italy)

Nitric oxide reduction catalyzed by amorphous copper–zirconium and copper–titanium alloys . . . . . 590
M. Dabalà, P. Canu and M. Magrini (Padova, Italy)

Electrochemical behaviour of Cu–Zr and Cu–Ti glassy alloys . . . . . 595
K. Brunelli, M. Dabalà (Padova, Italy), R. Frattini (Venice, Italy), G. Sandonà and I. Calliari (Padova, Italy)

Electrochemical behavior of Au–Gd alloys . . . . . 603
F. Rosalbino, E. Angelini, S. Spriano, C. Antonione (Torino, Italy), S. Delfino, D. Macciò and A. Saccone (Genoa, Italy)

Electrochemical and corrosion behaviour of cold rolled AISI 301 in 1 M $H_2SO_4$ . . . . . 607
A. Barbucci, M. Delucchi, M. Panizza, M. Sacco and G. Cerisola (Genoa, Italy)

On the kinetics of chromium electrodeposition on copper electrodes . . . . . 612
P. Baraldi, E. Soragni, C. Fontanesi and V. Ganzerli (Modena, Italy)

Author Index of Volumes 317–318 . . . . . 619

Subject Index of Volumes 317–318 . . . . . 621